



## SYLVACLEAR® PE 1800 Specialty Polymeric Gellant

Specialty Polymeric Gellants are low molecular weight polyamide resins formed by the reaction of function amines and diacids terminated with various end groups. They gel liquids via hydrogen bonding between the amide groups. The diacid portion of polyamide and/or its terminating group is soluble in, and associates, with liquid to be gelled.

**SYLVACLEAR® PE 1800** is a resin for use as a gellant with moderately polar organic liquids including unsaturated and aromatic hydrocarbon oils, esters, hydroxyl ester, ketones, ethers, and glycol ethers. It has the widest compatibility range of the specialty polymeric gellant product line. It is insoluble in water but capable of forming water-in-oil dispersion creams without surfactants. The weight average molecular weight is about 30,000.

Properties	Typical Properties
Softening Point °C, Ring & Ball, ASTM E28-99	99
Color, Gardner, ASTM 6166	6
Acid Number, ASTM D803, D65 and D1980	6.0
Amine Number, ASTM D2073 and D2074	0.5
Density (g/cc) @ 25°C, ASTM D1475	0.97

Features	Benefits
Compatible with a wide range of materials	Endless application potential
Controllable gel structure	Consistencies from jelly to wax like solids Gels are dilutable with additional solvent Uniform distribution of abrasives, pigments
Wide range of polarity	Able to gel the widest variety of non-polar and polar solvents. Recommended for esters, ketones, ethers and some alcohols including methylene chloride, ethylene glycol, propylene glycol, polyether polyols, butylenes carbonate, modified bisphenol A epoxy resins, and acrylate (TMPTA, TPGDA, acrylate esters) monomers.
Hydrogen bonding mechanism	Thermo reversible gels Low shrinkage
Polyamide chemistry	Water repellent Good adhesion to substrates Dispersion of pigments
Compatible at low solvent concentration	Yields thixotropic behavior
Based on nature based dimerized fatty acid	High renewable content Non toxic/non irritating/low odor
Low color, low softening point (90°C), low acid number (<15)	Gel manufacturing below 100 deg C, non reactive
Regulatory complaint	Listed on TSCA, exempt from EINECS, monomers being registered for REACH



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# Product Data Sheet

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<b>Hot Melt Stability</b>	Molten resin may be exposed to air for up to 12 hours at 100°C (212°F) without increasing in color, but nitrogen blanket is essential for longer molten storage residence times.
<b>Packaging</b>	Resin is available in pastille form in multi-wall bags, 44 lbs net.
<b>DOT Shipping Classification</b>	Non-hazardous.
<b>Handling &amp; Storage</b>	Resin is soft at room temperature, compacting may occur during storage. To minimize compacting the resin should be stored in closed drums, pallets should not be stacked, store at or below room temperature. As with many resins, oxidation may occur over time resulting in a darkening of the product.

<b>Manufacturing and Use</b>	<p>Heat to about 95°C to blend, lower temperatures require higher shear</p> <p>Typically gellant loading is 5% (weak) to 40% (firm) gels</p> <p>Thixotropic behavior at low levels (less than 5%)</p> <p>Finished gels revert at 10 to 20°C below the gellant softening point</p> <p>Gels re-form upon cooling (rate depends on concentration)</p> <p>Gels do not become less elastic when diluted (unlike thickeners), just softer</p> <p>Gellant select is critical. Materials behave differently in different solvents.</p> <p>Clear gels depend on selection of gellant; ester co-solvents can increase compatibility.</p>
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